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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/789,210

02/27/2004

Thomas J. Plona

26.0273 US

9128

7590

05/09/2006

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JAPAN

EXAMINER

HUGHES, SCOTT A

ART UNIT

PAPER NUMBER

3663

DATE MAILED: 05/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/789,210	Applicant(s) PLONA ET AL.	
	Examiner Scott A. Hughes	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-73 is/are pending in the application.
4a) Of the above claim(s) 19-73 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-5 and 7-18 is/are rejected.
7) ☒ Claim(s) 7 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 2/27/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

Applicant's petition for color drawings has been granted, and therefore the color drawings are accepted.

Response to Arguments

Applicant's amendments to the claims are sufficient to overcome the 35 USC 112 rejections of claims 1-18.

Applicant's arguments with respect to claims 1-5 and 7-18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

Claim 7 is objected to because of the following informalities:

Claim 7 is written as depending from claim 6. Claim 6 has been cancelled, and therefore claim 7 is objected to because it cannot depend from a cancelled claim. For the purposes of this action, claim 7 will be interpreted as if it depends from claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kimball (5278805).

With regard to claim 1, Kimball discloses a method displaying sonic logging data associated with an earth formation surrounding a borehole (abstract). Kimball discloses generating slowness frequency analysis log information which includes slowness-versus-frequency dispersion curve information associated with a first depth interval (Figs. 3a,b; 4) (abstract; Column 4, Lines 35-55; Column 7, Lines 14-68; Column 15 Line 6 to Column 16, Line 10). Kimball discloses projecting the dispersion curve information onto a slowness axis and displaying the SFA log from the projected dispersion curve information including a first axis corresponding to depth, and a second axis corresponding to wave slowness characteristics (Figs. 3a,b; 4; 6) (abstract; Column 5, Lines 35-40; Column 7, Lines 14-68; Column 15 Line 6 to Column 16, Line 10).

With regard to claims 2-3, Kimball discloses that the wave slowness characteristics are expressed in terms of wave slowness. Kimball discloses that the dispersion curve information is expressed in terms of wave slowness (Figs. 3-6) (Column 5, Lines 35-40; Column 7; Column 15, Line 1 to Column 16, Line 10). It is known that slowness is the inverse of velocity, and therefore the displays of Kimball could be turned changed to be in terms of velocity by inverting the slowness values.

With regard to claim 7, Kimball discloses that the projected slowness-versus-frequency dispersion curve information is represented in one dimension (Fig. 6).

With regard to claim 8, Kimball discloses that the dispersion curve information includes dipole flexural information which has been projected onto a slowness axis (Column 7, Lines 25-55; Columns 13-15).

With regard to claim 9, Kimball discloses that the dispersion curve information includes dipole compressional information that has been projected onto a slowness axis (Columns 1; 13).

With regard to claim 10, Kimball discloses that the dispersion curve information corresponds to sonic logging data generated by at least one source selected from the group consisting of a dipole source, a monopole source, and a quadrapole source (Column 7, Lines 15-45).

With regard to claim 11, Kimball discloses that the dispersion curve information corresponds to sonic logging data selected from the group consisting of fast dipole shear data, slow dipole shear data, low-frequency monopole data, and high frequency monopole data (Column 7, Lines 15-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimball as applied to claim 1 above, and further in view of Bose.

With regard to claim 4, Kimball does not disclose that the information displayed in the SFA log display includes homogeneous and inhomogeneous characteristics of the dispersion curve information over selected portions of the first depth interval. Bose teaches a method of sonic logging. Bose teaches that the information displayed in an SFA log display includes homogeneous and inhomogeneous characteristics of the dispersion curve information over selected portions of the first depth interval (Fig. 17) (Columns 9-10). It would have been obvious to modify Kimball to include information in and SFA display from sonic logging that include homogenous and inhomogeneous characteristics of the dispersion curves over selected portions of the first depth interval in order to look for damage to the formation near the borehole.

With regard to claim 5, Kimball does not disclose that the information displayed in the SFA log display includes isotropic and anisotropic characteristics of the dispersion curve information over selected portions of the first depth interval. Bose teaches information displayed in an SFA log display includes isotropic and anisotropic characteristics of the dispersion curve information over selected portions of the first depth interval. (Fig. 17) (Columns 9-10). It would have been obvious to modify Kimball to include information in and SFA display from sonic logging that include isotropic and anisotropic characteristics of the dispersion curves over selected portions of the first depth interval in order determine properties of the formation relating to shear slowness around the borehole.

Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimball as applied to claim 1 above, and further in view of Kimball (Geophysics March-April 1998 – referred to in this action as Kimball (Geophysics 1998) to distinguish from the Kimball reference used for claim 1).

With regard to claim 12, Kimball discloses generating estimated wave slowness information associated with the selected portions of the first depth interval (abstract; Column 5, Lines 35-40). Kimball does not disclose displaying an overlay of the estimated wave slowness information onto the SFA log display. Kimball (Geophysics 1998) teaches displaying estimated wave slowness as an overlay onto an SFA log display (Figs. 5-6). It would have been obvious to modify Kimball to include a display as taught by Kimball (geophysics 1998) in order to compare the determined slowness from different methods on the SFA logs.

With regard to claim 13, Kimball discloses that the estimated wave slowness information includes information from the group consisting of fast estimated shear wave slowness, estimated compressional wave slowness, and estimated Stoneley wave slowness (Column 7).

Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimball as applied to claim 1 above, and further in view of Stark

With regard to claim 14, Kimball does not disclose that the SFA log further comprises a navigable mechanism configured or designed to link the SFA log display to additional logging information associated with selected depths. Stark discloses the use

of a navigable mechanism in seismic displays for the purpose of accessing data, selecting parts of a display, and navigating between displays (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a pointer mechanism as disclosed by Stark in order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

With regard to claim 15, Kimball discloses that the SFA log display further includes depth specific sonic logging information (Fig. 6) (Columns 7-8, Column 13 to Column 16, Line 10). Kimball does not disclose that the information relates to a depth selected by the navigable mechanism. Stark discloses selecting data by use of a mechanism (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a mechanism as disclosed by Stark in order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

With regard to claim 16, Kimball does not disclose that the navigable mechanism is further configured or designed to automatically scroll through the SFA projection log display in a manner which causes additional depth specific sonic logging information to automatically be displayed. Stark discloses that the mechanism (mouse) can continuously provide points as the mouse is moved in order to provide a continuous "movie" style presentation. It would have been obvious to modify Kimball to include using a mouse that continuously provides information about the part of the display it is placed over in order to be able to see information about any part of the display on which the mouse is placed in order to compare it to other parts of the display.

With regard to claim 17, Kimball does not disclose that the SFA log display further comprises a navigable mechanism configured or designed to link the SFA log display to additional logging information associated with selected depths. Kimball discloses that the SFA log display further includes depth specific display information relating to selected characteristics of the depth specific logging information (Fig. 6) (Columns 7-8, Column 13 to Column 16, Line 10). Stark discloses the use of a navigable mechanism in seismic displays for the purpose of accessing data, selecting parts of a display, and navigating between displays (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a pointer mechanism as disclosed by Stark in order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimball in view of Stark as applied to claim 17 above, and further in view of Kimball (Geophysics March-April 1998)

With regard to claim 18, Kimball (Geophysics 1998) teaches that the depth specific display information is displayed concurrently with the SFA log information (Figs. 5-6). It would have been obvious to modify Kimball to include displaying the information concurrently with the SFA log information in order to track slowness with the depth along the borehole.

Conclusion

The cited prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A. Hughes whose telephone number is 571-272-6983. The examiner can normally be reached on M-F 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


SAH


JACK KEITH
SUPERVISORY PATENT EXAMINER